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09/245,442	02/04/1999	DONALD M. BELLENGER	15886-219	4893

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EXAMINER

NGUYEN, PHUONGCHAU BA

ART UNIT	PAPER NUMBER
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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/245,442

Applicant(s)

BELLENGER, DONALD M.

Examiner

Phuongchau Ba Nguyen

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 18-21, 23-31 and 33-39 is/are rejected.
- 7) ☒ Claim(s) 6-17, 22, 32, 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Allowable Subject Matter

1. The indicated allowability of claims 12-29-2006 is withdrawn in view of the newly discovered reference(s) to Kloth (6,842,453). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed

before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-3, 24, 27, 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kloth (6,842,453).

Regarding 1,

Kloth (6,842,453) discloses a method of switching an Ethernet packet (fig.5), the method comprising:

computing a tag (i.e., a hit in the shortcut table 700) for the Ethernet packet, said tag computed using two or more fields in said packet, wherein said fields are selected from Ethernet (i.e., MAC address) and network (i.e., destination) headers in said packet (step 508-fig.5);

looking up the computed tag in a table (i.e., table 700), the table containing entries associated with tags, the entries associating switching information with a tag, said switching information defining a route through a

plurality of interconnected switch nodes (step 516-fig.5, see also col.7, lines 3-12, 23-37); and

using said switching information associated with the computed tag from the table to switch the packet, if there is an entry for the computed tag in the table (steps 530-fig.5, if there is a shortcut found in the table 700, then switching the packet).

Regarding claim 2, Kloth further discloses sending the packet to a system (i.e., switch 300) with resources (i.e., processing packet using shortcut technique, col.6, lines 1-14) for routing a packet and for determining switching information (i.e., as if the packet is the candidate packet or enable packet, see fig.4).

Regarding claim 3, Kloth further discloses updating the table to include an entry for the computed tag, and wherein the computed tag is associated with the determined switching information (step 520-fig.5, see also col.8, line 66-col.9, line 16, e.g., creating new shortcut as the frame's information changed).

Regarding claim 37,

Kloth further discloses wherein said fields used to compute said tag are specified by a template, said template specifying fields for a particular protocol (col.6, line 56–col.7, line 2 wherein the MAC address field could be identified by a defined protocol).

Claim Rejections – 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kloth as applied to claim 2 above, and further in view of Griesmer (5,555,405).

Regarding claim 4,

Kloth discloses all the claimed limitations, except (1) an entry in the table for the computed tag associated with a switching instruction indicating that

packets should be dropped until the determining of switching information is complete.

However, in the same field of endeavor, Griesmer (5,555,405) discloses a mutual exclusion circuit 91 for ensuring that the frame forwarding circuit 54 cannot access the hash table 90 while the packing process 80 is writing the location of the new forwarding entry set to the pointer field of a hash table entry, corresponding to (1). Therefore, it would have been obvious to a skilled artisan to implement Griesmer's teaching of the mutual exclusion circuit 91 into the shortcut table of Kloth's system and the motivation being to prevent from access either a partially written hash table entry or a partially copied forwarding entry set {col.15, lines 15-21; fig.4c & 5}.

6. Claims 5, 18-21, 23-24, 27-31, 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth as applied to claim 1 above, and further in view of Liu (6,018,526).

Regarding claim 23,

Kloth discloses a method (figs. 5-7) comprising:

computing a tag (i.e., xtag-fig.6) for an Ethernet packet, said tag computed using at least two fields in said packet, wherein said fields are selected from Ethernet (i.e., MAC address-fig.6) and network (i.e., destination address) headers in said packet (step 508-fig.5);

looking up the computed tag in a table (i.e., table 700-fig.7), the table comprised of entries, the entries associating information about packet flows with tags (i.e., xtags 706-fig.7), the information including route information specifying a route (i.e., I3_da 702 and I3_sa 704) through a plurality of interconnected switch nodes (i.e., route between I3_sa and I3_da constituted a plurality of switched nodes-emphasis added);

updating information about the packet flow associated with the computed tag if there is an entry for the computed tag (i.e., step 520-fig.5, wherein rewritten the frame's information changed into the respective entry of table 700);

creating a new entry in the table if there is no entry for the computed tag (i.e., fig.6 wherein creating a new xtag for a detected hardware shortcut HW-SC 602 in forwarding table 600-fig.6); and

Kloth discloses all the claimed limitations, except (1) removing entries that have not been accessed for a predetermined period from the table.

However, in the same field of endeavor, Liu (6,018,526) further discloses table entries being updated periodically removing old entries, see col.6, lines 7-9, corresponding to (1). Therefore, it would have been obvious to an artisan to apply Liu's teaching to Kloth's system with the motivation being to provide an efficient, short and updated table with the most currently active entries for routing data packet.

Regarding claim 24,

Kloth further discloses wherein the creating further comprises storing data extracted from the packet in the entry (i.e., fig.6 wherein the xtag associated with the MAC address (layer 2) stored in table 600 and associated with l3_sa and l3_da (layer 3) stored in table 700.

Regarding claim 5,

Kloth discloses all the claimed limitations, except (1) wherein the entries in the table are removed if the tag corresponding to the entry has not been looked up in a predetermined period.

However, in the same field of endeavor, Liu (6,018,526) further discloses table entries being updated periodically removing old entries, see col.6, lines 7-9, corresponding to (1). Therefore, it would have been obvious to an artisan to apply Liu's teaching to Kloth's system with the motivation being to provide an efficient, short and updated table with the most currently active entries for routing data packet.

Regarding claim 27,

Kloth discloses all the claimed limitations, except (1) wherein the removing further comprises transferring the data associated with a tag to a system with resources for storing information.

However, in the same field of endeavor, Liu further discloses with an updated table, by erasing old entries every 5 minutes, the destination address of the

packet arriving from a network segment being used to determine whether the packet should be forwarded to another network segment based on the indications in the table (i.e., tag) corresponding to the destination address, corresponding to (1). Therefore, it would have been obvious to an artisan to apply Liu's dynamic table updating technique to Kloth's system with the motivation being to provide an effective forwarding data packet with short time in processing.

Regarding claims 18 and 28,

Kloth discloses all the claimed limitations, except wherein the computing further comprises using a mask of bits of the packet as a seed for a hash code generator.

However, in the same field of endeavor, Liu (6,018,526) discloses that the computing further comprises using a mask of bits (an 8-bit hash value; col.6, lines 31-32) of the packet as a seed for a hash code generator (hash circuit 98). Therefore, it would have been obvious to an artisan to apply Liu's hashing

technique to Kloth's system with the motivation being to fasten the forwarding of the packet from one network segment to another.

Regarding claims 19 and 29,

Kloth discloses all the claimed limitations, except wherein the hash code generator is a pseudo random number generator.

However, in the same field of endeavor, Liu (6,018,526) discloses that the hash code generator (hash circuit 98) is a pseudo random number generator {col.7, lines 34-36 wherein when a new packet arrives at port 92, the source address of the packet 94 is hashed to create an 8-bit hash value, thus the 8-bit hash value (i.e. 8-bit 219 & 220) was generated randomly in 0's and 1's numbers by the hash circuit 98}. Therefore, it would have been obvious to an artisan to apply Liu's hashing technique to Kloth's system with the motivation being to fasten the forwarding of the packet from one network segment to another.

Regarding claims 20 and 30,

Kloth discloses all the claimed limitations, except wherein the hash code generator is a shift register with a feedback loop.

However, in the same field of endeavor, Liu (6,018,526) does not explicitly disclose that the hash code generator is a shift register with a feedback loop. Liu discloses generating an 8-bit hash value (i.e. 8-bit 219 & 220 in fig.10A wherein the 8-bit is generated randomly in 0 and 1 number). Thus, the shift register with feedback loop is inherent in the hash generator for generating the 8-bit of hash value in random 0's and 1's numbers. (see also Prenell et al 5,664,016 for showing the inherent feature of hash function for generating a hash value in bits using a shift register with feedback loop). Therefore, it would have been obvious to an artisan to apply Liu's hashing technique to Kloth's system with the motivation being to fasten the forwarding of the packet from one network segment to another.

Regarding claims 21 and 31, Kloth discloses all the claimed limitations, except wherein the hash code generator has a non-zero probability of generating the same tag from different input packets.

However, in the same field of endeavor, Liu (6,018,526) discloses that the hash code generator has a non-zero probability of generating the same tag from different input packets {col.5, lines 46-48}. Therefore, it would have been obvious to an artisan to apply Liu's hashing technique to Kloth's system with the motivation being to fasten the forwarding of the packet from one network segment to another.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth in view of Liu as applied to claim 24 above, and further in view of Anderson (6,021,202).

Regarding claim 25,

Kloth discloses all the claimed limitations, except wherein the data includes billing information for the packet (claim 25), and wherein the packet is sent to a system with resources for analyzing the packet and determining billing information to be associated with the entry for the computed tag (claim 26)

Anderson (6,021,202) discloses that the packet (electronic transaction; i.e., electronic check or fund; col.7, lines 4-60) is sent to a system (bank) with resources (figs.2, 6, 10, 16-17, 31, 42) for analyzing the packet and determining billing information (i.e. signature, amount; fig.6) {claim 25} to be associated with the entry for the tag (sha 132; fig.6){claim 26}. Therefore, it would have been obvious to a skilled artisan to implement Anderson's teaching of different types of electronic document utilized the hash technique into the packet in Kloth's system and the motivation being to reduce costs of creating and mailing a document, to control timing transaction, such as payments, both through future dating of transaction, and to reduce fraud including forgery, alternation, duplication, and fraudulent depositing {col.15, lines 39-52}.

Regarding claim 33, Kloth further discloses wherein said fields used to computed said tag (i.e., xtag) are selected from Ethernet (i.e., MAC address, fig.6) and network headers (i.e., destination address, fig.7) in said packet, see also column 6, lines 33-39.

Regarding claim 34, Kloth further discloses wherein said fields used to compute said tag are specified by a template, said template specifying fields for a particular protocol (col.6, line 56–col.7, line 2 wherein the MAC address field could be identified by a defined protocol)

Regarding claims 35–36, Kloth does not explicitly disclose wherein said protocol is the real time protocol RTP (claims 35–36) or the hyper-text transfer protocol HTTP (claims 38–39). However, since Kloth discloses the MAC address field could be identified by a defined protocol, thus it would have been obvious to define the protocol as RTP or HTTP for the Ethernet packet being transmitted from one network segment to another corresponding to its network type. The motivation is being to provide switching using the shortcut technique for different data packet types.

8. Claims 38–39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kloth.

Regarding claims 38–39, Kloth does not explicitly disclose wherein said protocol is the real time protocol RTP (claims 35–36) or the hyper-text transfer protocol HTTP (claims 38–39). However, since Kloth discloses the MAC address field could be identified by a defined protocol, thus it would have been obvious to define the protocol as RTP or HTTP for the Ethernet packet being transmitted from one network segment to another corresponding to its network type. The motivation is being to provide switching using the shortcut technique for different data packet types.

Allowable Subject Matter

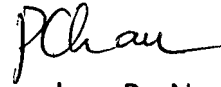
9. Claims 6–17, 22, 32, 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuongchau Ba Nguyen whose

telephone number is 571-272-3148. The examiner can normally be reached on Monday-Friday from 10:00 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2616



Phuongchau Ba Nguyen

Examiner

Art Unit 2616



HUY D. VU

SUPERVISORY PATENT EXAMINER
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